

Haddon Matrix Applied to the Problem of Motor Vehicle Crashes

Phases	Factors			
	Host	Agent/ Vehicle	Physical Environment	Social Environment
Pre-event (<i>Before the crash occurs</i>)	<ul style="list-style-type: none"> • Driver vision • Alcohol impairment • Driver experience/ability 	<ul style="list-style-type: none"> • Maintenance of brakes, tires • Speed of travel • Load characteristics 	<ul style="list-style-type: none"> • Adequate roadway markings • Divided highways • Roadway lighting • Hazardous intersections • Road curvature • Adequate roadway shoulders 	<ul style="list-style-type: none"> • Public attitudes on drinking and driving • Impaired driving laws • Graduated licensing laws • Speed limits • Support for injury prevention efforts
Event (<i>During the crash</i>)	<ul style="list-style-type: none"> • Spread out energy in time and space with seat belt and/or airbag use • Child restraint use 	<ul style="list-style-type: none"> • Vehicle size • Crashworthiness of vehicle—"crush space", integrity of passenger compartment, overall safety rating • Padded dashboards, steering wheels, etc. 	<ul style="list-style-type: none"> • Guard rails, median barriers • Presence of fixed objects near roadway • Roadside embankments 	<ul style="list-style-type: none"> • Adequate seat belt and child restraint laws • Enforcement of occupant restraint laws • Motorcycle helmet laws
Post-event (<i>After the crash</i>)	<ul style="list-style-type: none"> • Crash victim's general health status • Age of victims 	<ul style="list-style-type: none"> • Gas tanks designed to maintain integrity during a crash to minimize fires 	<ul style="list-style-type: none"> • Availability of effective EMS systems • Distance to quality trauma care • Rehabilitation programs in place 	<ul style="list-style-type: none"> • Public support for trauma care and rehabilitation • EMS training

Source: Injury Prevention: Meeting the Challenge, AJPM, 1989; Christoffel T, Gallagher S. Injury Prevention and Public Health, Gaithersburg, MD, 1999.